REPORT ON THE DROUGHT OF 1913 IN ARKANSAS.

By H. F. ALCIATORE, Section Director.

While the summer of 1913, with a mean temperature of 80.2°, which is 1.7° above the normal, was an unusually warm one, yet the records show that there have been three warmer ones, namely, the summer of 1896, with a mean of 81.3°; that of 1901, with a mean of 81.2°; and that of 1909, with a mean of 80.4°. The highest temperature recorded this summer was 107°, August 6, as compared with 116° for the summer of 1901. In August maximum temperatures ranging from 100° to 107° occurred at two stations in the eastern half, and at nine stations in the western half of the State on 10 to 20 days. At all stations but three, the thermometer reached the 100° mark on one or more days.

Considering the summer as a whole, June, July, and August, the average rainfall for the State was 7.61 inches, which amount is 4.32 inches less than the normal The drought was not a general one, as in not more than 35 or 40 per cent of the agricultural portions of the State was its effect felt. There was considerably less than the average rainfall at 19 out of 54 stations, of which two are in the northeastern, 5 in the southeastern, 7 in the northwestern, and 5 in the southwestern district, the deficiencies ranging from 2.82 inches in the southwestern to more than 9 inches in the northwestern counties. There have been drier summers than the present one since observations began.

In 1896 the summer rainfall averaged 5.84 inches, which is more than 5 inches below the normal, and in 1901 the average was only 6.89 inches.

The drought of 1913 began about July 14 in some parts of the State, and later in other parts. Barring fairly general showers on July 25 and 26 and on August 10 and 23, the total rainfall from July 14 to September 6, a period of 55 days, was widely scattered and insufficient in most of the counties from which reports have been received.

It was not until the close of July, however, that the drought became serious. August, with one exception, 1909, average rainfall 1.27 inches, was the driest month of that name on record. No rain occurred in the State between the 4th and 8th, and the last 8 days were practically rainless, while on the other 18 days of the month the rainfall was very light and scattered. The total fall ranged from 0.01 inch at Bentonville to 8 inches at Calico Rock, the latter amount having occurred in 24 hours. The rainfall was deficient at 47 out of 54 stations, and at 21 stations the total fall was less than 1 inch. Of the 24 localities in which the deficiency equaled or exceeded 2 inches, 18 were in the northern half of the State. An excellent idea of the duration and severity of the drought may be had by considering the rainy days at a few representative stations. In the northwestern district we find Bentonville with a record of 0.01 inch in 43 days; at Fort Smith no rain of consequence occurred during a period of 37 days beginning with August 2; and at Bergman rain occurred but once in 42 days. In the northeastern district, Pocahontas had only two light showers in 43 days, and Corning only three showers in 42 days. In the southeastern district, Pine Bluff shows two days with rain in 39 days, and Stuttgart only one light shower in 45 days. Finally, in the southwestern district, Mena and Centerpoint reported one shower each in a period of 40 days, and at Amity rain occurred only once in 46 days.

The drought was practically broken by fairly general and, in some places, heavy rains that fell September 7, 8, and 9.

As to the effects of the drought, it appears that all the staple crops were more or less damaged over the greater part of Arkansas, but the greatest damage occurred in the western part of the State. The Little Rock Board of Trade has estimated the damage to corn and cotton crops to be about 25 per cent, as compared with conditions of August 1, in the eastern half and from 25 to 40 per cent in the western half.

So far as known, there has been no complete failure of the water supplies in cities and towns that have waterworks.

The rivers were all very low in August and the early part of September. At Little Rock, on the Arkansas River, a new low-water record was made on September 4, when the river fell to a stage of 1.3 feet below zero, and remained at that stage until the 10th. This is the lowest recorded stage in any month of the past 34 years.

In conclusion it should be stated that while the drought and the excessive heat of the present summer have been very damaging, yet there is no evidence of anything like a general failure of crops, except, perhaps, in a few localities here and there.

THE DROUGHT OF AUGUST 2–SEPTEMBER 7, 1913, AT FORT SMITH, ARK.

By LEON J. GUTHRIE, Observer.

In the vicinity of Fort Smith an unusually dry, hot period began August 2, 1913, and partially terminated September 8, 1913. It could scarcely be termed an unusually destructive drought, as ample and well-distributed rains that occurred in July and on August 1 gave considerable surplus moisture and practically assured fair staple crops. These preceding favorable conditions greatly lessened the discomforts and losses that otherwise might have resulted from the protracted period of abnormally light rainfall and continuous heat.

On August 1, 0.82 of an inch of rain fell. From that date until September 8 the total fall was 0.02 inch. This is the longest period without substantial rainfall that has occurred at the Fort Smith station; but there have been several periods nearly as long, and some of them were preceded by less favorable conditions.

High day temperatures and abnormally low relative humidity were the characteristics of the period. The mean maximum temperature for August was 98.1°, the highest for any month of record. The highest previous records were 97.9° in July, 1901, and 97.7° in August, 1896. There were 13 days on which the maximum temperature reached 100° or higher. The greatest number of consecutive days with maximum temperatures of 90° or higher that has occurred during the 31 years of record began July 13 and ended September 7, 1913.

The relative humidity was the lowest of record, and toward the latter part of the month, under the influence of southwesterly winds, afternoon readings as low as those prevailing in arid regions were obtained. The mean for the month of August was 55 per cent, which is 15 per cent lower than the August normal. The lowest observed reading was 10 per cent at 5 p. m., August 29.

Upper clouds predominated, and the distinctive "fair weather type" of cumulus was seldom observed. The